

## **A Study on Training Need Analysis of Loco pilots**

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**ABSTRACT:** *Effective training or development depends on knowing what is required - for the individual, for the department and for the organisation as a whole. With limited budgets and the need for cost-effective solutions, all organisations need to ensure that the resources invested in training are targeted at areas where training and development is needed and a positive return on the investment is guaranteed. Effective TNA is particularly vital in today's changing workplace as new technologies and flexible working practices are becoming widespread, leading to corresponding changes in the skills and abilities needed.*

*There is an increasing interest in training in the world in general and in INDIA in particular to improve the performance of human resources to achieve the desired level of effectiveness and to remain successful. Training Needs Analysis (TNA) is often considered the most important step among the steps in the training cycle and therefore, should precede any training intervention. However, in spite of needs assessment's important role, the literature contains little empirical work on the topic. Thus, this study seeks to understand the role of existing training needs analysis process of Loco Pilots of Indian Railways, and the factors that affect the process to identify the needs and the impact of this on improving organizational performance.*

*To achieve the aim of this study, questionnaires and interviews will be carried out for Loco Pilots. Moreover, this study hopes to contribute to the knowledge, by raising and improving the understanding of current methods and practices of training needs analysis in Indian Railways and enrich and fill the gaps in the literature of training needs analysis.*

*Majority of Loco Pilot join Railways as Probationary Assistant Loco Pilot through competitive examinations conducted by Railway Recruitment Boards. Some of the Loco Pilot enters into service as Traffic Apprentice, which is a supervisory cadre. About 25% of the posts are filled-up by departmental promotions from Switchmen, Cabinmen and other miscellaneous categories. The prescribed qualification is Graduation for open market recruits and Matriculation for in-service selections. Directly recruited staffs are required to undergo 118 days training which includes training in Transportation and on-line practical training. But all the trainings are provided as per pre defined training module but keeping background of the Loco Pilots in view Training Need Analysis is essential to bridge the skill gap area.*

**Keywords:** Training Need Analysis, TNA, Training, Skill Gap

### **I. INTRODUCTION**

The General and Subsidiary Rule define Loco pilot as “the person on duty who is for the time being responsible for the working of the traffic within station limits, includes any person who is for the time being in independent charge of the working of any signals and responsible for the working of trains under the system of working in force”. The main objective of the job of Loco Pilot is reception and despatch of trains safely, maintaining punctuality in accordance with the rules and regulations in vogue. The specific duties of Loco Pilot vary from station to station depending on the class and size of the stations. In addition to core train passing duties, Loco Pilots are also required to perform a number of commercial and supervisory functions. Loco Pilot come in frequent contact with travelling passengers and have key role in projecting the image of the Railways. In view of the multi-faceted nature of their duties, the Loco Pilots have been allocated various designations, viz., Assistant Loco Pilot, Loco Pilot, etc.

The significance and value of training has long been recognized. Given today's business climate and the exponential growth in technology with its effect on the economy and society at large, the need for training is more pronounced than ever (McClelland, 2002).

Therefore, organizations need to consider some important issues as they face the future: continuous technological change; the increasing removal of trade barriers; the consequent globalization; the volatility of customer demand within existing markets (Luoma, 2000; Ulrich, 1997). These continuous changes have

challenged organizations to learn how to manage their businesses in the context of these continuous unpredictable changes, to learn how to confront these changes quickly and successfully. It is argued that, in order for an organization to achieve its objectives and goals, it needs to consider the important role of its people; it needs a highly competent, skilled and trained workforce.

The need to compete from the inside out has made organisations aim to increase the power of their people-related processes to build and sustain competitive advantage as the ultimate organisational objective; thus, outperforming competitors (Luoma, 2000).

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## **II. SCOPE OF PRESENT STUDY**

2.1 Training need often appear at the organizational or activity level. Alternatively, an organization that decides to enhance its level of customer service as part of a corporate strategy knows that a programme of training and development is essential for its success.

2.2 The techniques selected for the present study were Interview Schedule and Training Need Analysis questionnaire. These techniques were supplemented by the observations of job holders.

## **III. METHODOLOGY**

**3.1. Sample Size and characteristic:** The present study has been done on the basis of the data of Loco Pilots.

Interview Schedule, Training Need Analysis Questionnaire, and on the job Observation techniques are utilized to detect skills gap from a real-world driving database of 60 Loco Pilots.

The details related to size of sample, sample category, and rating used in this study is mentioned in Table-1.

<b>Size of sample</b>	<b>60</b>
<b>Sample category</b>	<b>Loco Pilots and Assistant Loco Pilots</b>
<b>Tools Used</b>	<b>Interview Schedule, Training Need Analysis Questionnaire, and Observation Schedule</b>

(Table: 1)

**a. Tools: Rating: (Name of the Tools and brief about this)**

**3.2.1. Interview Schedule:** This method was used to explore the subject (interviewee). A questionnaire was designed by the team of professional psychologists who has undertaken the study for the interviewers. The previous knowledge of Job description of Loco Pilots was used as hints for collecting information from different perspectives. As the Interview Schedule method suggests, every statement was followed by other relevant questions. During the sample survey, the focus was on collecting the information related to their performed duty. All the responses received from the subjects were qualitative data and analyzed accordingly.

**3.2.2. Observation:** Observation of work activities and worker behaviours is a method of training needs analysis which can be used independently or in combination with other methods of training need analysis. These methods differ in terms of who does the observing, what is observed, and how it is observed.

This method was used to observe the Loco Pilots behavior which causes the lack of performance. An observation sheet was designed by the team of professional psychologists who has undertaken the study for the drivers. The statements of the observation sheet were used as hints for collecting information from different perspectives.

**3.2.3. Training Need Analysis Questionnaire:** This method was used to understand the duties performed by the subject on actual. A questionnaire was designed by the team of professional psychologists who has

undertaken the study. The previous knowledge of Job description of Loco Pilots was used as hints for designing the questionnaire from different perspectives. As the questionnaire method suggests, every questions were relevant to the job description of the Loco Pilots. During the process, the focus was on collecting the information related to their performed duty.

## IV. RESULTS

### 4.1 Analysis of the survey:

The sequence of activities discussed by Loco Pilot and Assistant Loco Pilot has been shown in Table. The table shows generic activities, which help in arriving at Knowledge, Skills, Abilities and Personality traits involved in the job of Loco Pilots. The activities were analysed for underlying KSAOs by the professional psychologists.

#### 4.1.1. Training Need Analysis Questionnaire

A training need is a shortage of skills or abilities, which could be reduced or eliminated by means of training and development. Training needs hinder employees in the fulfillment of their job responsibilities or prevent an organization from achieving its objectives. They may be caused by a lack of skills, knowledge or understanding, or arise from a change in the workplace.

The ratings of various attributes are given in the below Table.

Sl. No.	Attribute	Whether Critical for Job
1.	Computer	*
2.	Selective Attention	**
3.	Time Sharing	**
4.	Reaction Time	**
5.	Arm-Hand Steadiness	**
6.	Stamina	**
7.	Stress Management	**
8.	Memory	**
9.	Concentration	**
10.	Technical Knowledge	*
11.	Communication	*
12.	Coordination	*
13.	Self Esteem	**

\* Critical \*\* highly critical (Table-2)

#### 4.1.2. INTERVIEWS

The interview method includes asking questions to both incumbents and supervisors in either an individual or a group setting. There are two types of interview: unstructured interview and structured interview. Unstructured interview is method with no prepared questions. Structured interview include normally a job-holder's sequence of activities in performance and an inventory or questionnaire may be used.

The main duties of Loco Pilot are derived on the basis of interviews are given in Table.

Sl. No.	Functions	Underlying Attributes
1	Reporting for duty before 30 minutes.	Punctuality
2	Read, comprehend & memorize information given in the lobby on various registers, notice boards, and/or Crew Management System (CMS).	Written comprehension, Memory, Knowledge of English, Hindi or Vernacular language
3	Obtain train number, key and VHF from on duty supervisor.*	Oral expression
4	Set watch with the Guard and exchange the documents.*	Oral expression, Cooperation
5	Visually inspect train entering the platform from motorman-end.	Observation, Mechanical Comprehension, Technical Knowledge
6	Read entries in the log book and defect registers in the cab.	Written comprehension
7	Note down the reading of the various displays and meters.	Written expression
8	Record requisite information in logbook, Speedometer, etc. and prepares a rough	Written expression

	journal of halts and speed restrictions.	
9	Check safety items.	Technical Knowledge, Memory
10	Change Head code/Destination Board.	Manual dexterity
11	Charge the train and check equipment and various controls in the cab.	Technical Knowledge, Time sharing, Control Precision
12	Check functioning of communication instruments with the Guard.	Oral expression, Control Precision
13	Respond to auditory and visual signals.	Time sharing, Far vision, Colour Discrimination, Depth perception, Glare sensitivity, Auditory attention
14	Start the train by manipulating proper control.	Control Precision, Technical knowledge
15	Conduct mandatory brake test during run.	Safety Conscious, Control precision
16	Blow the horn to warn the workmen and trespassers as and when required.	Observation, Alertness, Control precision, Sense of responsibility, Static strength
17	Monitor signals and track.	Vigilance, Perceptual speed, Time sharing, Reaction time, Far vision, Colour Discrimination, Depth perception, Glare sensitivity, Auditory attention
18	Operate vigilance control device	Alertness, Static strength
19	Negotiate neutral section.	Technical skills, Reaction time, Manual dexterity
20	Clear obstructions on the track in case of run-over.	Static strength, Emotional stability
21	Troubleshoot malfunctions.	Problem sensitivity, Deductive reasoning, Technical knowledge
22	Inform Control and other supervisors about unusual occurrences.	Oral expression, Sense of responsibility
23	Put off the switches and controls and secure the rake.	Control precision, Sense of responsibility, Safety consciousness
24	Attend emergencies like ACP, motor failure, etc.	Perseverance, Time sharing, Knowledge of rules, Stress tolerance
25	Handover the key and VHF set to on duty supervisors.*	Sense of responsibility
26	Record entries in defect register/log book.	Written expression

(Table-3)

#### 4.1.3. Observation Schedule

The observation method includes observing the subject while asking questions and while foot plating (On the Job). This method was used to observe the Loco Pilots Skills which cause the performance on the job. An observation sheet was designed by the team of professional psychologists who has undertaken the study for the Loco Pilots.

The performed duties by Loco Pilot are derived on the basis of observation are given in Table. KSAO's derived from Analysis of Observed activities

Serial No.	Knowledge	Skill	Ability	Others
1	Language	Written Expression	Memory	Punctuality, Compliance
2	Technical knowledge	Written comprehension	Observation, Far vision	Compliance
3	Knowledge of Rules	Mechanical comprehension	Stamina	Meticulous
4	--	Mechanical Skills	Time sharing	Perseverance
5	--	Driving skill	Auditory discrimination, Response orientation	Safety conscious
6	--	Oral expression	Memory,	Cooperation

			Alertness, Vigilance, Far vision, Problem sensitivity, Time sharing	
7	--	Communication	Observation, Depth perception	Sense of responsibility
8	--	--	Auditory discrimination, Response orientation	Alertness
9	--	--	Vigilance, Control precision	Emotionally stable
10	--	--	Static strength	Perseverance
11	--	--	Control precision	Conscientious

(Table-4)

## V. INTEGRATION OF RESULTS

5.1. The results obtained through different techniques of training need analysis have already been discussed in respective sections. The job profiles that emerged from the different techniques are summarised in following table for an overall view of the training requirements of Loco Pilots.

Summary of Critical Attributes derived through various methods of Training Need Analysis

Methods	Attributes				
	<i>Sensory/Perceptual</i>	<i>Psycho-motor/Physical Skill</i>	<i>Cognitive</i>	<i>Learning/Knowledge/Communication</i>	<i>Personality/Motivation</i>
Observation	Far Vision	Multi-limb coordination, Stamina	Deductive Reasoning, Time Sharing, Observation, Attention, Memory	Knowledge of Rules, Oral Comprehension, Oral Expression, Written Comprehension, Written Expression, Mechanical Comprehension	Cooperating, Conscientious, Punctual, Careful
Interview	Auditory Discrimination	Multi-limb Coordination, Stamina	Deductive Reasoning, Time Sharing, Memory, Attention, Observation	Oral Expression, Knowledge of Rules, Written Expression,	Careful, Compliance, Cooperating, Communication Skill, Conscientious
Training Need Analysis Questionnaire	--	Arm-Hand Steadiness, Stamina	Memory, Time Sharing, Selective Attention, Reaction Time, Concentration	Computer, Safety Consciousness, Technical Knowledge	Stress Management, Communication, Coordination, Self Esteem

(Table-5)

**5.1.1.** It is not possible to assign any quantitative weightage to any of the attributes to determine their importance while indicating the findings that are significance for the job.

**A) Sensory Perceptual**

1. Hearing Sensitivity
2. Vision

**B) Psychomotor/Physical Skill**

3. Multi-limb Coordination
4. Stamina
5. Arm-Hand Steadiness

**C) Cognitive**

6. Selective Attention
7. Deductive Reasoning/Intelligence
8. Information Ordering
9. Memory
10. Observation
11. Time Sharing
12. Reaction Time
13. Concentration

**D) Learning/Knowledge/Communication**

14. Knowledge of Rules
15. Mechanical Comprehension
16. Oral Comprehension
17. Oral Expression
18. Written Comprehension
19. Written Expression
20. Computer
21. Safety
22. Consciousness
23. Technical Knowledge

**E) Personality/Motivation**

24. Cooperating
25. Conscientious
26. Punctuality
27. Careful
28. Compliance
29. Communication Skill
30. Stress Management
31. Communication
32. Coordination
33. Self Esteem

## **VI. RECOMMENDATION**

Training is still a major focus in needs assessment literature, but there is a move toward analysis of performance and all the possible variables for improvement. This change requires a change in assessment and analysis methods. Most needs assessment and analysis methods do not analyze organizational culture or environmental factors that may lead to solutions other than training. The focus is primarily on the individual performer and the tasks performed. More needs assessment and analysis methods are needed that include assessment and analysis of the organization and environment as factors for performance improvement. Existing needs assessment and analysis methods may also be revised to include a more comprehensive view of performance and the factors that influence performance. Since practitioners show a preference for particular needs assessment and analysis methods, they would benefit from continuous study and application of multiple needs assessment and analysis methods. There was no one needs assessment or analysis method identified in the literature review that was recommended for all performance improvement problems, so practitioners will need multiple methods to choose from in order to apply each one to the appropriate situation under investigation. The

training need analysis of Loco Pilot of Indian Railways was made using three techniques which are considered one of the most representative techniques of training need analysis. The main objective of the study was to identify abilities, skills and personality traits that are crucial for the job of Loco Pilots. The most critical attributes identified in this study are alphabetically listed below –

- ▶ Attention
- ▶ Carefulness
- ▶ Compliance
- ▶ Conscientious
- ▶ Cooperation
- ▶ Coordination
- ▶ Memory
- ▶ Multi-limb Coordination
- ▶ Observation
- ▶ Punctuality
- ▶ Selective Attention
- ▶ Sense of Responsibility
- ▶ Stamina
- ▶ Self Esteem
- ▶ Stress Management
- ▶ Time Sharing
- ▶ Vision

The above attributes are critical to bridge the gap for job success of Loco Pilots/Assistant Loco Pilots. Hence the periodical training is required from the above mentioned critical attributes for the better performance of the Loco Pilots Job.

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